

## ARE YOU ENERGY WISE?

Energy is everyone's concern.

Supplies aren't endless and prices are climbing rapidly.

Did you realize that Ontario has almost no oil of its own? That we must purchase what we need from outside the Province to convert into motor gasoline for our cars, to heat our homes and office buildings, and to run our factories?

No wonder it is so important for us all to conserve energy in general, and crude oil in particular. We must utilize oil more efficiently and more effectively if we are to have a secure supply of it in the future. OIL — make it last, use it wisely.

Why don't you test how much you know about energy use in your car and in your home? Take a few minutes to answer this quiz and you may get some good ideas on how to conserve energy and save money.

Remember, if we each save a little, we all save a lot!



## Residential Conservation Quiz

Ontarians use 5,000,000,000 litres of heating oil each year. To get an idea of that volume, how long do you think it would take for 5 billion litres of oil to go over Niagara Falls?

About 1 hour    About 3½ hours    About 6 hours

About 23,000,000 litres of water go over Niagara Falls each minute. At that rate, it would take a little more than 3½ hours for 5 billion litres of oil to tumble over the Falls.

For looking at it another way, in the time you took to read this paragraph, somewhere in Ontario one 200-gallon fuel oil tank was filled. That means about 11 tanks are filled every minute of every day.

Knowing that home heating is used mainly in winter, and that lights, appliances and hot water are used every day, what share of the annual domestic energy bill would be devoted to heating?

One third    One-half    Over one-half

In most homes, the heating bill would be more than all other energy bills combined. This is particularly true for older homes which are generally heated by oil and frequently are not insulated to the best standards.

How much would it cost per year to heat an average-size, older and minimally insulated home in the Toronto area?

About \$300    About \$500    About \$900

There are many variables such as size, construction, heating unit efficiency and insulation, but a typical pre-war home would burn between 1,000 and 1,300 gallons of oil. At Toronto prices, this would have amounted to \$730 to \$950 for the 1979-80 winter and probably will be more in the next heating season.

What would be the saving in converting an oil heating system to natural gas in a house that now costs about \$950 to heat through a Toronto winter?

About \$50    About \$150    More than \$300

Conversion to natural gas would represent a saving of almost 15 per cent or \$142.50 in fuel costs.

A homeowner can save heating dollars by turning down the thermostat at night.

A real saving    Very little saving    No saving

A real saving, because setting back the thermostat for an eight-hour period during the night — from 20°C to 17°C — will save about five per cent of a heating bill.

If \$1,000 is invested in extra insulation, how much can be saved in oil heating costs?

Very little    Depends on the house    Quite a lot

A \$1,000 investment in extra insulation could be profitable. It is difficult to generalize, but savings can be calculated in specific instances. For a poorly insulated pre-war home, additional insulation may cut the heating bill by 40 to 45 per cent. The better insulated a home, the lower will be the savings. However, the saving will increase as the price of fuel oil rises.

For the homeowner on a limited budget, where should upgrading of home energy efficiency begin?

The ceiling    The walls    Doors and windows  
Increasing ceiling insulation is generally the easiest and least expensive step to take.

Insulation materials are rated by an R value — such as R8 or R20. What does this mean?

Ability to retain heat    Type of material    Thickness of insulation

The R value assigned to an insulation product indicates its ability to retain heat in the home. Some materials are more effective than others, requiring less to insulate to the same extent. A manufacturer or contractor can specify the R value of a given material per inch of thickness, or what the R value is for a packaged product.

An oil furnace does require some maintenance. How frequently should it be done?

Once a year    Twice a year    Every 2 or 3 years

Furnaces must be well maintained to function efficiently and once a year servicing is a must. This can cut your heating bill by as much as 10 per cent.

Does it make any difference in heating costs to insulate warm air ducts or radiator pipes?

Makes a difference    Not useful    Sometimes useful

When heating ducts pass through spaces that do not require heating, they should be thoroughly insulated.

If everyone saved only one per cent in heating oil, it would

Make little difference    A big difference    No real difference

A one per cent overall saving in heating oil would amount to 50,000,000 litres per year. That would heat about 2,500 new, well-insulated homes for a year. If we each save a little, we all save a lot.

In a rented house, saving heating dollars only benefits the landlord.

Right    Partly right    Wrong

Wrong. For one thing, it is healthier to keep you thermostat at a lower setting. Even if your rent includes your heat, the extra cost of heating could eventually force up rent. Increased oil consumption places a real burden on our economy and could, in the future, lead to scarcities.

A good-sized window on the sunny side of the house can save energy.

True    Maybe    False

By itself, a south window could cost you heating dollars if it has only a single pane of glass. By adding a second pane, such as a storm window, or by installing double glazing, it will lose less heat (but still six times as much as a well-insulated wall). Proper windows have good quality double glazing, a tight-fitting, well-caulked or sealed frame, and a heavy curtain to draw after sundown.

A properly set humidifier may be healthier, but can it save energy?

Good for the throat    Makes you feel warmer    No saving

When the air in your home is dry, your skin loses moisture making you feel colder. But you feel more comfortable in the same room temperature with the humidity set at a proper level. If the humidifier control is set too high, condensation on cold walls or windows will result. Keep the humidity high enough for comfort, but low enough to avoid condensation.

Are fireplaces useful in helping to heat your home, or are they responsible for valuable heat losses?

Useful    Only nice to look at    Can lose heat

A fireplace is always nice to look at and it may be useful in heating a room. However, they do lose heat, particularly when no fire is burning and the flue is not tightly closed. An open flue draws heat up the chimney.

In Canada, we use about as much energy as other countries with cold climates.

We rate worse    Better    About the same

Canada has the highest energy consumption per person in the world. We use more energy per capita than the United States and about 50 to 60 per cent more than a similarly cold country such as Sweden.

It is a lot of bother to maintain weatherstripping and caulking around doors and windows, but does it really pay in saving energy?

Not much    A little    A lot

Taking the time and spending a few dollars could mean a substantial return. Heat loss around doors and windows without caulking and weatherstripping can be as high as 40 per cent.



## Home and Car Tips

• Have your furnace serviced regularly to ensure maximum efficiency.

• Lower the thermostat during the day by 8 to 10 degrees F when the house is empty and at night when sleeping.

• Check windows and doors for drafts and caulk those cracks.

• Insulate your home or improve on what you've got.

• Install storms on all windows and doors and save up to 10 per cent on your heating bill.

• Increase fuel economy by up to 15 per cent by keeping your car well serviced.

• Save 5 per cent of a tank of gasoline or up to 4 litres for each fill-up through proper tire inflation.

• Drive 10 to 15 miles per hour slower and consume 12 to 18 per cent less gasoline to cover the same distance.

• Avoid jack rabbit starts.



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## Transportation Conservation Quiz

Ontarians use about 13,000,000,000 litres of gasoline each year. Some of it is used in trucks, buses and airplanes, and some is used in cars. What percentage do you think is used in private automobiles?

About 15%      About 35%      About 75%

Of all gasoline consumed in Ontario each year, about three-quarters, or 10 billion litres, goes into the gas tanks of private cars.

Where does the gasoline for Ontario cars come from?

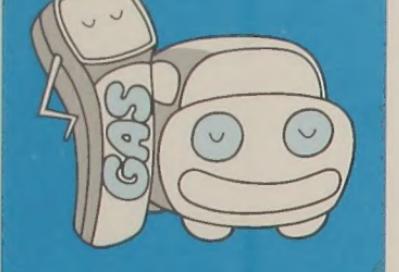
Ontario      Canada      Canada and Foreign Sources

Gasoline is made from crude oil. Ontario produces very little crude oil. Most of Ontario's requirements come from Canada, but about 20 per cent of Canada's oil requirements come from foreign sources.

Is there anything that each driver can do now which would make a significant contribution to accommodating Ontario's gasoline requirements?

Very little      Quite a lot      Nothing at all

An average driver can easily reduce his or her gasoline consumption by at least 10 per cent. If we all did, it would save one billion litres each year.



With the cost of cars, maintenance, insurance and such things being what they are, would saving gasoline really reduce the cost of driving?

Not at all      Very little      Quite considerably

The cost of gasoline is usually the second-highest expense, after depreciation, in the operation of a car in its first four years. Therefore, by driving less and keeping a car in good operating condition at all times, substantial savings can be realized. With older cars, gasoline becomes the greatest expense as the value of the car depreciates.

People use cars to drive back and forth to work more than for any other purpose. Can the daily commuter by car expect to save on gasoline at all?

No possibilities      One possibility      Many possibilities

There are many possibilities. Car and van pooling are two solutions, cutting gasoline costs of to-work-and-back trips by three-quarters. Using public transit for all or part of the daily trip is another possibility. Other efficiencies can be realized through better maintenance and improved driving practices.

Does the answer to making a car operate more efficiently lie only under the hood, or can a driver take other steps to save money?

Engine only      Cheap improvements      Expensive improvements

Very often inexpensive improvements can be made:

- Adequate tire pressure saves money at the pumps.
- 100 pounds of unnecessary weight in the trunk can cost the average motorist one to two per cent more gas per kilometer.
- An unnecessary roof rack increases gasoline consumption, particularly when highway driving.

Are most cars driven with properly inflated tires?

Almost all      More than half      Less than half

A Transport Canada survey indicates that about 70 per cent of all cars are driven with under-inflated tires.

A motorist can find he uses up to five per cent more gas by neglecting to check tire pressures as prescribed in the owner's manual at least once a month.

Is checking tire pressure so difficult that few people drive with properly inflated tires?

Easy      Cumbersome      Difficult

It is easy, if keeping in mind:

- Specified pressures are for cold tires. If checking pressure after having driven about 15 kilometers, tires will be hot and pressures should be 28 kPa (4 psi) higher than specified.

- A proper gauge should be used. Pressure gauges on air dispensers at service stations are often inaccurate.
- Check all tires. Frequently, rear tires require more air.
- A temperature drop of 10°C will cause tire pressure to drop 14 kPa (2 psi).

When buying new tires, will the type of tire make a difference at the gas pump?

Little difference      No difference      A lot of difference

Tire type can make an appreciable difference. Radial tires will save about five per cent in gasoline consumption compared with standard tires in city driving, and up to 10 per cent on the highway. But, remember to keep them properly inflated.

Is major engine work required to increase the efficiency of a good running car?

Major overhaul      Occasional tune-up      Regular tune-up

A minor but regular tune-up can increase the efficiency of many cars by about 10 per cent.

A survey conducted by a major spark plug manufacturing company indicated that half of all vehicles in Toronto show evidence of improper maintenance and that an average of nine per cent improvement in fuel economy could be realized through a minor tune-up done twice a year.

When does most engine wear occur?

While driving      When starting a cold car      While going uphill

95 per cent of all engine wear occurs during the first 15 seconds when starting a cold engine. But no appreciable engine wear is caused by restarting a warm engine.

When is a car least efficient?

Highway driving      City driving      Idling

Idling is obviously least efficient. When the engine is running and the car is standing still, you get 0 km per litre.

A cold car must idle for a while after starting up.

How long should that be?

30 seconds      1 minute      A few minutes

For most cars and most weather conditions, 30 seconds idling after start up is sufficient, followed by driving gently for the next few minutes. To heat up an eight-cylinder engine to peak efficiency, it may have to travel as far as 27 kilometers.

- Highway driving is more efficient than city driving. Therefore, driving at a maximum allowable speed is always most efficient.
- Always true      Never true      Sometimes true

Not true on highways; reducing maximum speed by 25 km/hr can reduce gasoline consumption of most cars by as much as 20 per cent.

In the city: to the extent possible, maintaining constant city driving speed is the safest way to travel and can save about 15 per cent in gasoline over rapid starts and stops.

Which extra feature on a car most increases the consumption of gasoline?

Automatic transmission      Power steering      Air conditioning

Air conditioning needs more gasoline even when the unit is turned off. Air conditioning adds 100 extra pounds to the car's weight and that means one to two per cent more gasoline. When operating, it needs about nine per cent more gasoline on the highway and about 20 per cent more in city driving.

For a motorist who drives equally in the city and on the highway how much would a compact car save in gasoline and money?

10%      15%      25%

The saving would vary from car to car, but the Canadian Automobile Association quotes these averages for comparative driving costs:

5.16¢ per kilometer for 8-cylinder standard cars

4.38¢ per kilometer for domestic compacts — a 15% reduction

3.42¢ per kilometer for a sub-compact — more than 33% reduction from an 8-cylinder car.

Driving costs include gas, oil, maintenance and tires, but about 75 per cent of driving cost is gas and oil.

If each motorist were able to stretch gasoline by getting 35 more kilometers for each 100 litres, how great would the saving be?

1%      5%      10%

With even 35 kilometers per 100 litres, Ontario's gasoline demand would decrease by more than five per cent. That would be five per cent of 13 billion litres, or 650 million litres each year.

If we each save a little, we all save a lot.

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# Oil and Gas Conservation

